

IN THE CLAIMS:

Please amend the claims as follows.

Claim 1 (Currently Amended): A solid-state imaging apparatus comprising:

an energy ray sensitive region, being formed on a front surface side of a semiconductor substrate, having a plurality of photoelectric conversion portions that are arrayed two-dimensionally, and generating charges in response to the incidence of energy rays;

a plurality of transfer electrodes, each being disposed on the front surface side of the energy ray sensitive region with a first direction of the two-dimensional array as the longitudinal direction and transferring the charges in a second direction of the two-dimensional array; and

voltage dividing resistors, disposed in correspondence to the transfer electrodes and each dividing a DC output voltage from a DC power supply to generate a DC output potential and providing the DC output potential to the corresponding transfer electrode,

wherein a single potential gradient is formed for each set of photoelectric conversion portions arrayed in the second direction of the two-dimensional array below the plurality of transfer electrodes and increases gradually in a charge transfer direction.

Claim 2 (Currently Amended): A solid-state imaging apparatus comprising:

an energy ray sensitive region, being formed on a front surface side of a semiconductor substrate, having a plurality of photoelectric conversion portions that are arrayed two-dimensionally, and generating charges in response to the incidence of energy rays; and

a plurality of transfer electrodes, each being disposed on the front surface side of the energy ray sensitive region with a first direction of the two-dimensional array as the longitudinal direction and transferring the charges in a second direction of the two-dimensional array,

wherein a predetermined potential is applied to each of the plurality of transfer electrodes in such a manner that ~~the potential formed under the plurality of transfer electrodes~~ a single potential gradient is formed for each set of photoelectric conversion portions arrayed in the second direction of the two-dimensional array below the plurality of transfer electrodes, and wherein the single potential gradient increases gradually in the charge transfer direction.

Claim 3 (Original): The solid-state imaging apparatus according to Claim 1 or 2, further comprising: a charge accumulation portion, accumulating the charges, which have been transferred by the plurality of transfer electrodes, according to each set of the photoelectric conversion portions arrayed in the second direction and outputting the accumulated charges in a batch according to each set of the photoelectric conversion portions; and

a charge outputting portion, inputting and then successively outputting the charges output from the charge accumulation portions according to each of the sets of the photoelectric conversion portions arrayed in the second direction.

Claims 4-6 (Canceled).